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BIBLIOGRAPHY, CARTOGRAPHY, DISCOVERY,  
AND EXPLORATION OF THE  
ISLAS REVILLAGIGEDO<sup>1</sup>

BY

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## INTRODUCTION

This paper was prepared with four principal objectives: to compile a bibliography of references to the Islas Revillagigedo, to publish new charts of Isla San Benedicto and Isla Socorro which have been made from recent aerial photographs, to attempt to standardize spelling and location of geographic names, and to include an account of the discovery and exploration of the archipelago. Original maps, charts, and references to the nomenclature of the islands have been consulted in so far as possible.

We gratefully acknowledge the help of the late Mr. Joseph R. Slevin, California Academy of Sciences, for information used in compiling table 2. Dr. Carl Fries, Jr., previously with the U.S. Geological Survey, assisted in the selection of the most suitable geographic names; he also translated many of these names from English to Spanish. Dr. Meredith F. Burrill, Director of the U.S. Board on Geographic Names, recommended names of features on Isla Socorro which were obtained from Mexican sources. The U. S. Navy Hydrographic Office and British Admiralty furnished photocopies of original charts, sketch surveys, and publications. We also are indebted to the many other persons who have assisted us in the search for bibliographic material, furnished information on visits to the Islas Revillagigedo, read preliminary copies of the manuscript, and offered suggestions. Mr. Robert C. Winsett of the Scripps Institution of Oceanography drafted the charts illustrated in this paper.

## CARTOGRAPHY AND NOMENCLATURE

The early evolution of the names and geographic locations of the four Islas Revillagigedo, as shown on charts prior to 1800, has been treated by Wagner (1937) and briefly mentioned in another section of this paper and will not be discussed further.

In 1793 Captain James Colnett, R.N., made the first detailed chart of Isla San Benedicto (Isle St. Berto)<sup>3</sup>, Isla Socorro (Socoro), and Roca Partida (Roka Partida). His "Plan of the Islands of Revillagigedo" was published by the London firm of A. Arrowsmith in January, 1798, and a copy of the chart accompanies Colnett's book (1798). Captain Sir Edward Belcher, C.B., R.N., made sketch maps of Isla Clarión and Bahía Braithwaite on Socorro in 1839 (however, 1840, the year after the end of his voyage, is the date given on his original chart)<sup>4</sup>. The sketch maps made by Colnett and Belcher were incorporated into British Admiralty Chart no. 1936 (no title) which was first published in June, 1849.

<sup>3</sup> Apparently there is no saint of this name (Pablo G. Franco, personal communication).

<sup>4</sup> Photographic copies of the original Hydrographic Office and British Admiralty charts and the sketch surveys by Belcher and Dewey have been examined by the authors.

The best published charts of the islands were the result of surveys made by Commander George Dewey, U.S.N., and his officers in 1874. These sketch surveys were used in the first edition of the U. S. Navy Hydrographic Office<sup>5</sup> Chart no. 1687, "Islands of the Revilla Gigedo Group and Alijos Rocks" (exclusive of Isla Clarión), which was published in January, 1898. A separate chart, no. 1688, of only Isla Clarión was published in February, 1898. About this time the British Admiralty also began to use the U. S. Charts in revised editions of Chart no. 1936, "Islands of the North Pacific Ocean." Of the Islas Revillagigedo only Belcher's sketch of Bahía Braithwaite was retained from the first edition. The H.O. combined all of the islands of the archipelago into one chart in June, 1951, when the ninth edition of Chart no. 1688, "Islas Revilla Gigedo, Guadalupe and Escollos Alijos," was published.

The Islas Revillagigedo were visited by the Mexican Transporte de Guerra *Oaxaca* in 1899. Sketch maps, made by Subteniente Arturo Puga and Segundo Teniente José Servín y L., appear to have been first published by Muñoz Lumbier (1919). The sketches are profile views, except for an excellent plan of Bahía Sulphur which is complete with soundings. Muñoz Lumbier's plate 3, "Isla de Clarión," from the *Oaxaca* survey shows Pico Tienda de Campaña (Tent Peak) to be higher than Monte Gallegos (Mt. Gallegos). Monte Gallegos is shown as the higher peak on the H.O. and British Admiralty charts. Although Pico Tienda de Campaña appears to be higher from a ship at sea Wilfred B. Bryan, Jr., (personal communication), who has climbed both peaks, reports that it is difficult to judge which is the higher on land.

A number of photographic flights to Isla San Benedicto and Isla Socorro, which have resulted in more accurate charts of these two islands (figures 1 and 2), were made by airplanes of the U.S. Navy between 1952 and 1956 at the request of the University of California, Scripps Institution of Oceanography. Figure 1 was drawn from an uncontrolled two-photograph mosaic of San Benedicto. The scale was determined by photogrammetric methods and is considered to be reliable. Figure 2 of Isla Socorro also was drawn from an uncontrolled mosaic, consisting of numerous vertical photographs taken on two different flights and adjusted to a common approximate scale, supplemented with aerial oblique photographs. No control has been established in the field. Because of the large natural scale of the mosaic, absence of rectification of the individual aerial photographs, and altitude of Cerro

<sup>5</sup> Subsequently abbreviated H.O.

Evermann, the chart scale and positions of geographic features should be considered as only approximate.

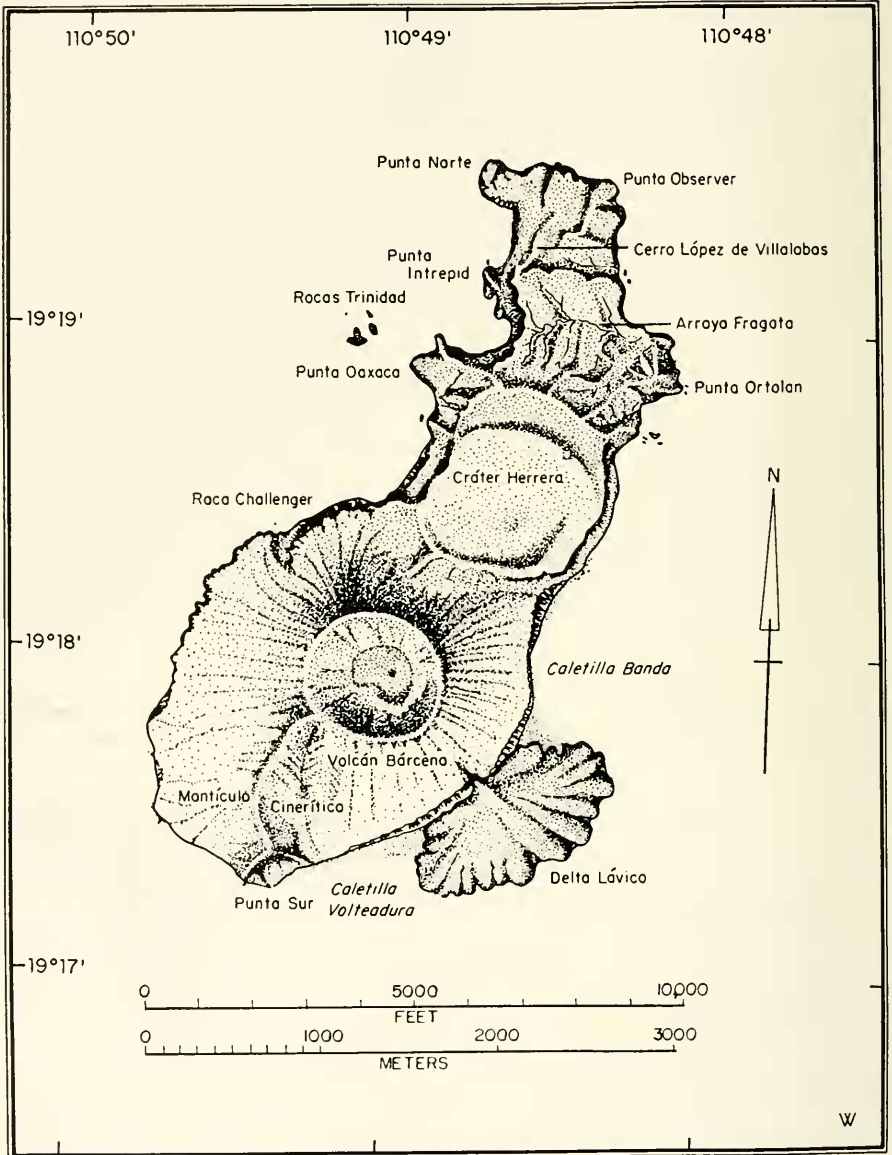


Figure 1. Map of Isla San Benedicto.

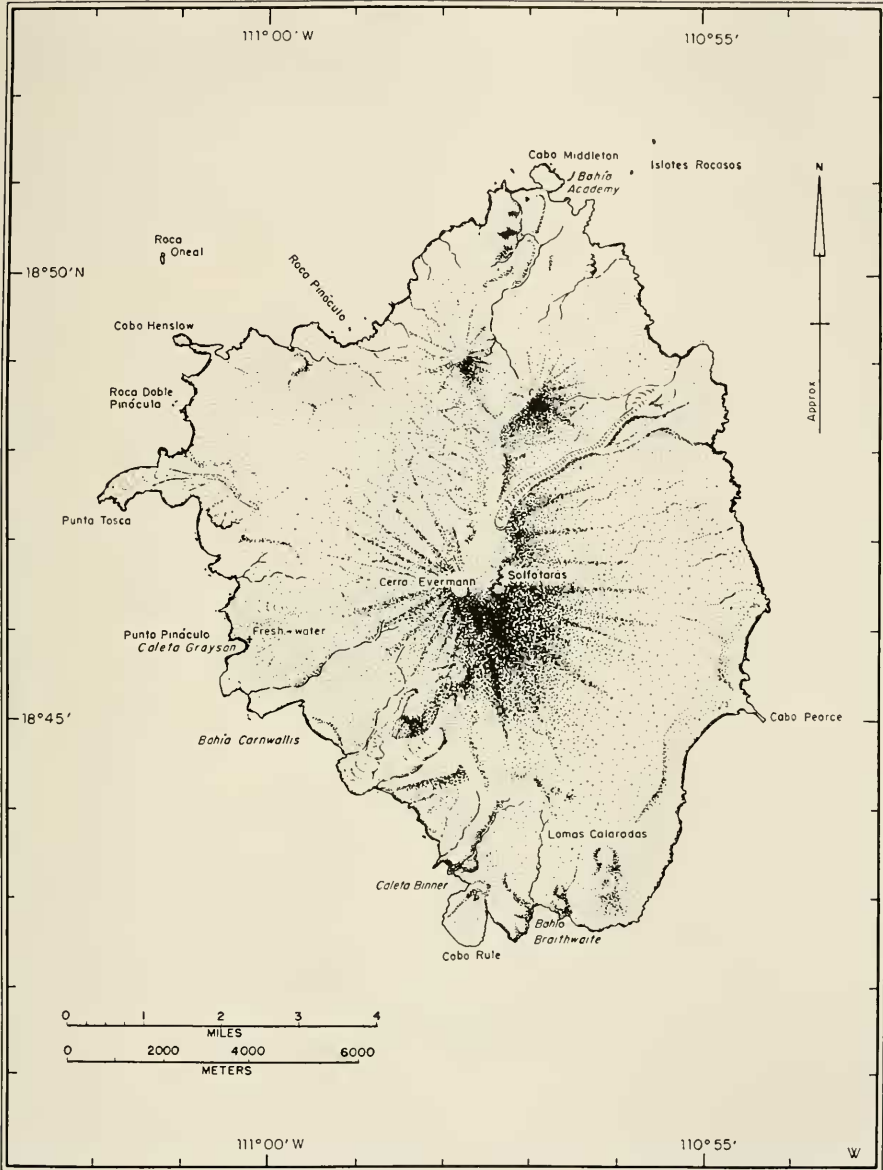


Figure 2. Map of Isla Socorro.

Figure 3, a sketch map of Isla Roca Partida, was prepared from H.O. Chart no. 1688 modified by a study of photographs taken at sea from the R/V *Paolina-T* in 1953.

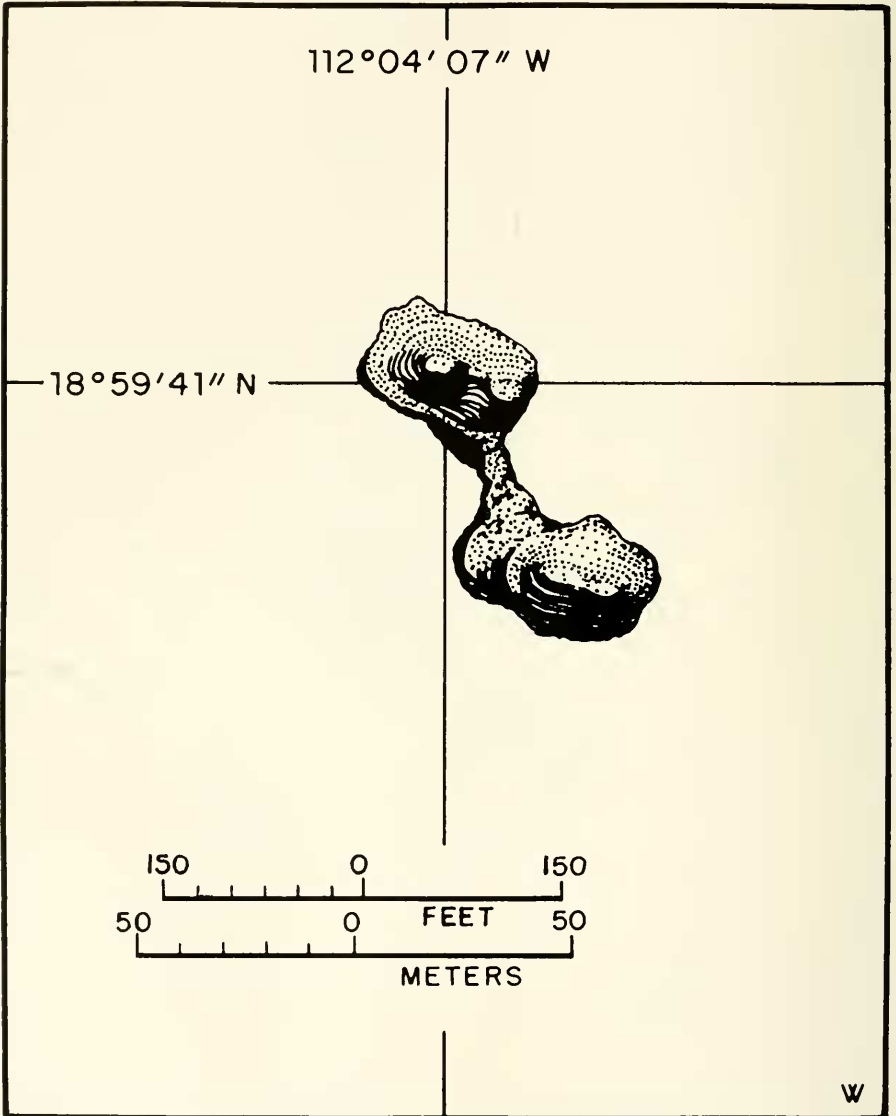


Figure 3. Sketch map of Isla Roca Partida.

The map of Isla Clarión, figure 4, which is the least well delineated island of the group, was drawn from H.O. Chart no. 1688 with changes made from photographs taken on land from the sea during the visits of the R/V *Paolina-T* in March, 1953, and the R/V *Crest* in May, 1955. In May, 1955, a number of gyrocompass bearings and radar positions of Isla Clarión were made from the R/V *Crest* by one of the authors (Richards). These new data, which should help to place geographic features more accurately, unfortunately have not yet been worked up.

In table 1 the place names proposed for Isla San Benedicto were necessitated in order to describe the new volcano and the geology of the island. The two pre-existing names also have been included for completeness.

The new map of Isla Socorro, figure 2, in many ways more nearly resembles Colnett's 1793 sketch than it does the H.O. Chart no. 1688. Names that Colnett appears to have given to certain geographic features are shown for other features on the H.O. chart. Table 2 compares the names used by Colnett and the H.O. Caleta Binner was originally called Bimmers Cove by Colnett in honor of his kinsman ". . . Mr. Binmer, first assistant surveyor of the Navy, who had superintended the original construction of the sloop (*Rattler*) . . .," Colnett (1798, p. xii). The name is correctly spelled on the 1798 Arrowsmith chart, but is incorrect on both the original and present H.O. and British Admiralty charts. Despite the fact that Colnett's names have priority, "Binner" and the H.O. names have been retained in figure 2 because they have been in use in the literature for over 150 years. The location of Bahía Cornwallis in figure 2 has been clarified; the bay was unrecognizable on the H.O. chart.

Colnett's name, "Pinnacle Point" (Punta Pináculo), is proposed for the headland with the prominent offshore stack at the northwest entrance to Caleta Grayson (Grayson's Cove). This name was selected following the recommendation by Dr. Raymond M. Gilmore, U.S. Fish and Wildlife Service, that Caleta Grayson should be better identified because of the importance of the cove; it is the only permanent source of flowing fresh water in the entire archipelago. Punta Pináculo and the trees behind the beach identify Caleta Grayson from the sea.

An unnamed bay southeast of Cabo Middleton was visited on the November, 1953, Scripps expedition. In order to identify collections made in this locality, the name "Bahía Academy" (Academy Bay), was proposed by Richards (unpublished manuscript) in recognition of the 1925 California Academy of Sciences expedition to the Islas Revillagigedo.

A suggested translation of Red Hills, which are located on the southeast side of Socorro (Hanna, 1926, p. 50), is Lomas Coloradas. Two isolated rocky sea stacks are located northeast of Cabo Middleton. The name Rock

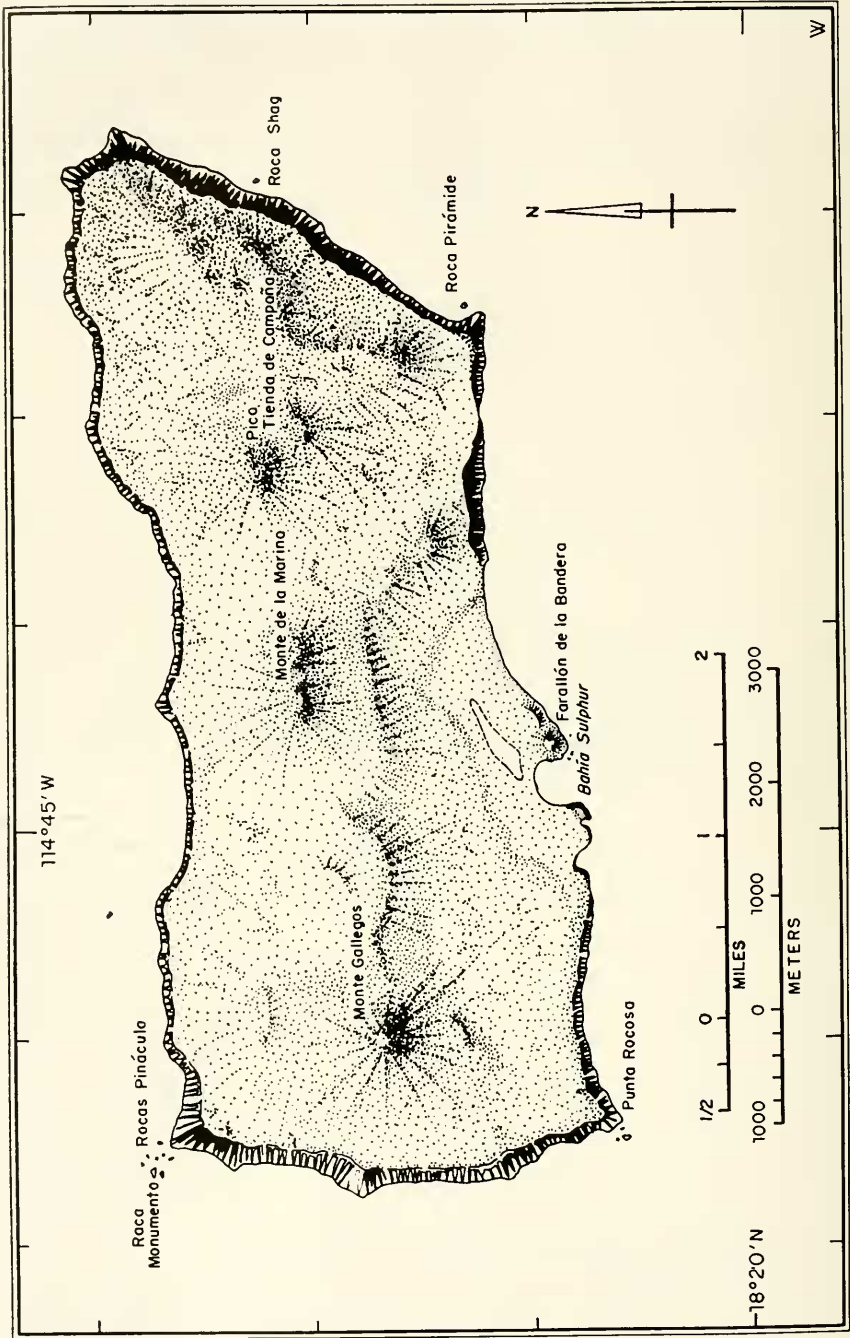


Figure 4. Sketch map of Isla Clarión.



Islets, which has been used for these stacks (H.O. Chart no. 1688, 1951), is translated to Islotes Rocosos in figure 2.

The following two names used on H.O. Chart no. 1688 of Isla Socorro were not found on Mexican charts or references (Meredith F. Burrill, personal communication): "Old Man of the Rocks Point" (southwest headland of Caleta Grayson) and "Table Range" (plateau area on east Socorro). We recommend that these names be deleted.

On Isla Clarión, Bahía Sulphur has not been translated "Bahía Azufre," as shown on certain charts, because the bay was named after the I.M.S. *Sulphur*. On Belcher's original chart of the Bahía Sulphur area this name was applied to the bay west of Farallón de la Bandera. The bight east of Farallón de la Bandera is unnamed. Shag Rock at the east end of Clarión was called "Roca del Cuervo" (Crow Rock) by the Escuela Superior de Guerra (Vivó, 1949, p. 59). The original name is retained.

With the exception of the names given above and in table 1, all names used in figures 1 to 4 have appeared in one or more of the following references: Atlas Geográfico de la Estados Unidos Mexicanos (1946); British Admiralty Chart no. 1936 (1952 edition with small corrections to 1954); Carta de la República Mexicana (1949, Comité Coordinador del Levantamiento de la República Mexicana, Tacumbaya, D.F.); Colnett (1798); Derrotero de las Costas de la República Mexicana (1939); Escuela Superior de Guerra (1949); Muñoz Lumbier (1919); U.S. Board on Geographic Names (1952); and U.S. Navy Hydrographic Office Publication no. 56 (1874, first edition—written by Dewey), Chart no. 1688 (1951, 9th edition) and no. 1687 (1925, 9th edition).

Table 3 lists distances in nautical miles between the islands and cities or geographic features in Baja California, California (U.S.A.) Colima, and Jalisco.

TABLE 1

*Proposed and Existing Nomenclature of Isla San Benedicto*

<i>Name</i>	<i>Location and Notes</i>
Punta Sur (South Point)	Suggested name for the southwest point of the island; it has been used previously by Toscano (1940, p. 322). Extreme southern point of the pre-eruption island, H. O. Chart no. 1688.
Montículo Cinerítico (Ash Heap)	Translation of the existing name for the eroded volcanic ash cone on south San Benedicto which was named in 1925 by the California Academy of Sciences (Hanna, 1926, pp. 20, 63). The maximum altitude, determined by photogrammetric methods, is about 310 meters. ("Black Bluff," shown on H. O.

TABLE 1 (*Continued*)*Proposed and Existing Nomenclature of Isla San Benedicto*

<i>Name</i>	<i>Location and Notes</i>
	Chart no. 1688—1951, 9th edition—on the east side of the Ash Heap, has been completely buried under Volcán Bárcena. The "White Bluffs" on the southern end of the pre-eruption island no longer exist.)
Caletilla Volteadura (Turnover Bight)	Suggested name for the newly created small open bay or bight on the southern end of the island between Punta Sur and the new lava flow (Delta Lávico). The name is derived from an incident in December, 1952; the skiff completely overturned when making a landing in this locality.
Volcán Bárcena (Bárcena Volcano)	Name suggested in 1953 by the late Ing. Teodoro Flores, Director of the Instituto de Geología in the Universidad Nacional de México, in honor of the Mexican geologist Mariano Bárcena (1842–1899). Volcán Bárcena replaces the previous unofficial name of Boquerón, meaning Big Mouth, which was suggested by Howel Williams and proposed by Dietz (1953). The maximum altitude, determined by photogrammetric methods, is about 340 meters.
Delta Lávico (Lava Delta)	Suggested name for the new lava flow from Volcán Bárcena which formed between December, 1952, and March, 1953.
Caletilla Banda (Banda Bight)	Suggested name for the newly created small open bay, or bight, on the east side of the island between the Delta Lávico and Cráter Herrera. It is named in honor of Longinos Banda who was in charge of the first party to land on the island. See Banda (1862).
Cráter Herrera (Herrera Crater)	Translation of the existing name for the old crater in the central part of the island. It was named by the California Academy of Sciences in 1925 in honor of Prof. Alphonso Herrera (Hanna, 1926, pp. 20, 63).
Punta Ortolan (Point Ortolan)	Suggested name for the southern promontory of the headland on northeast San Benedicto between Cráter Herrera and the extreme northeastern cape (Cabo Observor). It is named after the U.S.S. <i>Ortolan</i> , the ship which carried the 1925 California Academy of Sciences expedition to the Islas Revillagigedo.
Arroyo Fragata (Frigate Arroyo)	Suggested name for the dry main channel of the largest drainage system between Cráter Herrera and the northern peak (Cerro López de Villalobos). In November, 1953, the only frigate, or man-of-war bird, rookery on the island was located north of the arroyo on the eastern side of the island. See Brattstrom and Howell (1956).

TABLE 1 (*Continued*)*Proposed and Existing Nomenclature of Isla San Benedicto*

<i>Name</i>	<i>Location and Notes</i>
Cerro López de Villalobos	Suggested name for the fourth highest topographic feature on the island. The volcanic hill is named in honor of Ruy López de Villalobos who discovered Isla San Benedicto in 1542. The maximum altitude, determined by photogrammetric methods, is about 225 meters.
Punta Observer (Observer Point)	Suggested name for the northeast point. This point is named after the U. S. yacht <i>Observer</i> which brought the first party to land on the island after the birth of the volcano. The Delta Lávico was first observed from the vicinity of this point on December 9, 1952, by the scientific party, less than 20 hours after the lava had broken through the base of Volcán Bárcena.
Punta Norte (North Point)	Suggested name for the northwest point.
Punta Intrepid (Point Intrepid)	Suggested name for the first minor headland on the western side of the island south of the north end. The point is located west of Cerro López de Villalobos and is named after the U. S. tuna clipper M/V <i>Intrepid</i> which visited the island on August 12, 1952, and furnished a valuable first report of Volcán Bárcena after its birth.
Rocas Trinidad (Trinity Rocks)	Suggested name for the three stack islets located off the west side of the island.
Punta Oaxaca (Point Oaxaca)	Suggested name for the only major headland on the western side of the island. It is named after the Mexican transport <i>Oaxaca</i> which visited the islands in 1899. See Mitchell (1933, pp. 124-135).
Roca Challenger (Challenger Rock)	Suggested name for the volcanic dome west of Cráter Herrera. Except for a northwest facing cliff the dome is now buried under Volcán Bárcena. The rock is named after the U. S. tuna clipper M/V <i>Challenger</i> , the only witness to the birth of Volcán Bárcena on August 1, 1952. Photographs taken from the <i>Challenger</i> show the beginning eruption column ascending from behind this cliff or rock.

TABLE 2  
Variant Names on Isla Socorro

Location	Name used on Cobett's 1798 Chart	Name Used on H.O. Chart No. 1688 (9th Edition, 1951) <sup>a</sup>	Name Used by Authors in Figure 2
North headland .....	Cape Middleton	Cabo Middleton (Cape Middleton)	Cabo Middleton
Rock Islet off northwest headland .....	O Neals Rock	Oneal Rock (Oneal Rock)	Roca Oneal
Northwest headland .....	—	Cabo Henslow (Cape Henslow)	Cabo Henslow
West headland .....	Cape Henslow	Punta Tosca (Rugged Point)	Punta Tosca
Northwest headland of Caleta Grayson .....	Pinnacle Point	—	Punta Pináculo (Pinnacle Point)
Central southwest bay .....	Cornwallis Bay	—	Bahía Cornwallis (Cornwallis Bay)
South-southwest bight .....	—	Bahía Cornwallis (Cornwallis Bay)	—
Headland south of Bahía Cornwallis .....	Cape Rule	—	—
Small cove west of south headlands .....	Binners Cove	Caleta Binners (Binners Cove)	Caleta Binner
Largest south headland .....	—	Cabo Regula (Cape Rule)	Cabo Rule
Bay east of south headlands	Braithwaite Bay	Bahía Braithwaite (Braithwaite Bay)	Bahía Braithwaite
East headland .....	—	Cabo Pearce (Cape Pearce)	Cabo Pearce
Northeast headland .....	Cape Pearce	—	—

<sup>a</sup> Name enclosed in parentheses from H.O. Chart no. 1687 (9th edition, May, 1925).

TABLE 3  
Airline Distances in Nautical Miles<sup>7</sup>

	<i>Isla Clarión</i>	<i>Cabo Corrientes, Jalisco</i>	<i>Los Angeles, Calif.</i>	<i>Manzanillo, Colima</i>	<i>Isla Roca Partida</i>	<i>Isla San Benedicto</i>	<i>San Diego, Calif.</i>	<i>Cabo San Lucas, B. C.</i>	<i>Isla Socorro</i>
<i>Isla Clarión</i> .....	—	526	951	591	153	226	866	368	209
<i>Isla Roca Partida</i> ....	153	371	956	462	—	73	864	261	60
<i>Isla San Benedicto</i>	226	296	964	370	73	—	871	220	27
<i>Isla Socorro</i> .....	209	312	982	378	60	27	890	246	—

<sup>7</sup> Distances based on U. S. Navy Hydrographic Office Chart no. 1066 (66th edition, 1945) and unpublished charts by one of the writers (Richards).

## DISCOVERY AND EXPLORATION

Probably the best description of the discovery of the Islas Revillagigedo has been compiled by Burney (1803, pp. 167–169, 226–232; 1806, pp. 348–350), who states that his references are accounts by Gaetan, Ramusio's Collection, (1613); May (Anon., 1621); Galvaom (1731); Herrera (date unknown); and Grijalva (date unknown). Isla Socorro was discovered in December, 1533, by Hernando de Grijalva, commander of the Spanish ship *San Lazaro*, who named the island Santo Tomás. According to Edward R. del Rip (quoted in Hanna, 1926, p. 51), Santo Tomás was named Socorro in 1608 by Captain Martín Yañez de Armida in honor of his wife.

In 1542 Ruy López de Villalobos, in command of a squadron of ships from New Spain, discovered two islands which he named Santo Tome and La Anublada. According to Burney (1803, p. 232), "The island first seen by Villalobos . . . is the same which is marked Sto. Berto, in some of the present charts. Villalobos supposed it to be the island which had been discovered by Grijalva, and therefore called it Sto. Tome. The second island, however, which he named La Anublada, and which has since been named Socorro, is evidently the Sto. Tomás of Grijalva." The common interpretation by historians is that López de Villalobos' Anublada (also spelled Anublada or A Nublada, meaning cloudy—nublado) was later called Santo Berto (*sic*) or San Benedicto. Burney's account appears to be more probable because Cerro Evermann on Socorro with an altitude of about 3500 feet above sea level is frequently cloud capped; consequently the designation "cloudy" is appropriate. Also, according to Galvaom's statements, which are given by Burney (1803, p. 228, see also p. 232), López de Villalobos' Anublada (Socorro) apparently was located south of his Santo Tomás (San Benedicto).

West of the two islands López de Villalobos discovered a divided rock which he called Roca Partida.

The discovery of Isla Clarión (originally named Santa Rosa by Joseph Camacho—date unknown), as well as Roca Partida, previously has been credited to Camacho (Mitchell, 1933, p. 119). However, from Burney (1806, pp. 348–350) it appears that Clarión was discovered in 1615 instead of 1779. Burney relates that in December 1615 Admiral Joris Spilbergen saw two islands (undoubtedly San Benedicto and Socorro) after sailing west-southwest from Cabo Corrientes on the coast of Mexico— $28^{\circ}21'$  North latitude. The next day a third island was sighted which at first was mistaken for a ship (Roca Partida). Two days later at  $18^{\circ}20'$  North a fourth island which had five hills was discovered; each hill appeared to be a separate island. Although Burney quoted the account of Spilbergen's voyage from an early reference,<sup>8</sup> he did not realize the significance of Spilbergen's fourth island. The sailing time to Clarión from Roca Partida (a distance of 153 nautical miles) as well as the latitude ( $18^{\circ}21'$  North) and the five hills could only describe Clarión which, from north or south of the Island, appears to be composed of three, five, or six peaks depending upon one's bearing and distance.

In 1793 Captain James Colnett (1798, pp. 116–117) named the archipelago "Revilla Gigedo"<sup>9</sup> in honor of the viceroy to New Spain, Don Juan Vicente de Güemes Pacheco de Padilla, the second Count Revillagigedo.

Table 4 lists known visits to the Islas Revillagigedo which resulted in new information on the islands.

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<sup>8</sup> Page 80 in *Miroir, Oost and West Indical*, Amsterdam, 1621: a French translation of an account of Admiral Spilbergen's Journal by Jan Cornelisz May, alias Mensch-eter, principal mariner or ship master according to Burney (1806, p. 330). However, Mr. G. A. Cox, Director of the *Nederlandsch Historisch Scheepvaart Museum* in Amsterdam, advises that May could not have written this book and that the author is unknown (personal communication).

<sup>9</sup> This undoubtedly was the unfortunate start of the double name ("Revilla Gigedo") usage for the islands by certain authors and cartographers. In 1952 the U. S. Board on Geographic Names (p. 6) adopted "Islas de Revillagigedo" (literally Islands of Revillagigedo) as the official name for United States of America Government use. The current geographical practice is generally to delete the "de" in cases such as this. The shortened form, "Islas Revillagigedo," is the name most commonly used by Mexican authors and has been adopted in this paper.

TABLE 4  
Visits to the *Islas Revillagigedo*<sup>10</sup>

Year	Ship	Islands Visited	Investigator <sup>11</sup>	Chief Collections, and/or Study	Notes and References <sup>12</sup>
1533	<i>San Lazaro</i>	Socorro	Capt. Hernando de Grijalva	Exploration	Discovery of Isla Socorro. Burney (1803, pp. 167-169).
1542	not known	San Benedicto Roca Partida	Ruy López de Villalobos	Exploration	Discovery of Isla San Benedicto and Isla Roca Partida. Burney (1803, pp. 226-232).
1615	<i>Great Sun</i>	Clarión	Adm. Joris Spilbergen	Exploration	Discovery of Isla Clarión. Burney (1806, pp. 348-349) and this paper.
1793	<i>Rattler</i>	San Benedicto Socorro Roca Partida	Capt. James Colnett, R.N.	Natural history observations, soundings, charts	Natural history Archipelago named in honor of Count Revillagigedo. Colnett (1798, pp. 86-90, 107-120).
1825	<i>Boston</i>	Socorro	Capt. Benjamin Morrell, Jr.	Sealing	Morrell (1832, p. 213).
1837 and 1839	H.M.S. <i>Sulphur</i> and H.M.S. <i>Starling</i>	Socorro Clarión	Capt. Edward Belcher, R.N.	Zoology, botany	British naval exploring expedition. In 1837 Socorro was not visited and no landing was made on Clarión. Belcher (1843, pp. 48, 346-350).
1848	U.S.S. <i>Portsmouth</i>	Socorro	Lt. J. W. Revere, U.S.N.	Exploration	Noted an active eruption of Cerro Evermann. Revere (1947, pp. 234-235). For a discussion of this observation see Richards and Dietz (1956, p. 157).

<sup>10</sup> Although this table is principally concerned with scientific expeditions or visits, other known explorations are also included.

<sup>11</sup> Where more than three investigators participated in an expedition only the investigator in charge or the captain of the ship is listed.

<sup>12</sup> In most cases only the general account of each visit is listed.

TABLE 4 (Continued)

Year	Ship	Islands Visited	Investigator <sup>1</sup>	Chief Collections, and/or Study	Notes and References <sup>2</sup>
1862	<i>Maria</i>	San Benedicto Socorro	Leoninos Banda (in charge)	Geographical lo- cations, geol- ogy, plants, animals	Geographical lo-Sponsored by the State of Colima, Mexico, Banda (1862). Also reviewed in Mitchell (1933, pp. 118-126).
1865	not known	Socorro	Andrew J. Grayson	Birds, physical geography, natural history	No published information has been found on the 1865 visit. Concerning the 1867 visit see Grayson (1872).
1867	<i>Republicana</i>				
1868	<i>Joven Hortenza</i> and <i>India</i>	Socorro	Francisco Javier Cueva (in charge)	Exploration	According to Almada (1939, pp. 159) the <i>Joven Hortenza</i> took the party to Socorro and the <i>India</i> returned the group to the mainland. Formal Mexican possession of the islands resulted from this expedition (Almada, 1939, p. 159-160).
1869	not known	Socorro	John Smith (in charge)	Colonization	Origin of the sheep of Socorro. Hanna (1926, p. 52).
1874	U.S.S. <i>Narragansett</i>	San Benedicto Socorro Roca Partida Clarión	Cdr. George Dewey, U.S.N.	Insular sketch surveys	Sketch maps used on present day U.S. Hydrographic Office charts. Dewey (1874, pp. 58-60.)
1880	<i>Hassler</i>	Socorro Clarión	Lt. Cdr. H. E. Nichols, U.S.N.	Magnetic observations	Magnetic survey by the U.S. Coast and Geodetic Survey along the coasts of Mexico and Central America. Observed magnetic dip, declination, intensity, latitude and longitude. Report of the U.S. Coast and Geodetic Survey (1883, pp. 37-38) and Schott (1883, pp. 190-221).



TABLE 4 (Continued)

Year	Ship	Islands Visited	Investigator <sup>11</sup>	Chief Collections, and/or Study	Notes and References <sup>12</sup>
1889	<i>Albatross</i>	San Benedicto Socorro Clarión	Lt. Cdr. Z. L. Tanner, U.S.N., C. H. Gilbert, C. H. Townsend	Fish, plants, reptiles, dredgings, soundings	U.S. Commission of Fish and Fisheries cruise, Tanner (1892, pp. 432-436).
1897	<i>H. C. Wahlberg</i>	San Benedicto Socorro Clarión	A. W. Anthony (in charge)	Plants, fish, general collections	Expedition to the Islas Galápagos, Brandegee (1900, pp. 19, 26-28).
1897	<i>Lila and Mattie</i>	Clarión	Charles M. Harris	Birds, reptiles, insects	Expedition to Islas Galápagos sponsored by Walter Rothschild. See: F. Hamilton (1903, Hunting the giant tortoise, <i>Wide World</i> , XI: 4, 25-30). Additional information from Joseph R. Slevin (personal communica- tion).
1897	<i>U.S.S. Boston</i>	Socorro	not known	—	Search for the lost brigantine <i>Tahiti</i> , Slevin (1931, p. 18).
1899	<i>Oaxaca</i>	San Benedicto Socorro Roca Partida Clarión	Cdr. E. Portes Ramírez, Sub- lieut. Arturo Puga, and Lieut. José Servín y L.	Geographical locations, maps, soundings	Sketch maps published by Muñoz Lumbier (1919, pp. 10-12, plates I-V). See also Mitchell (1933, pp. 124-125).
1903	<i>Mary Sachs</i>	Socorro Clarión	R. H. Beck (in charge)	Birds, shells, plants	California Academy of Sciences expedition. Except for a diary in the possession of E. W. Gifford all records and specimens were lost in the San Francisco fire of 1906 (Joseph R. Slevin, personal communication).

TABLE 4 (Continued)

Year	Ship	Islands Visited	Investigator <sup>1</sup>	Chief Collections, and/or Study	Notes and References <sup>2</sup>
1905	<i>Academy</i>	San Benedicto Socorro	R. H. Beck (in charge)	General zoological and botanical collecting, geology, photography	California Academy of Sciences expedition to the Islas Galápagos. Slevin (1931, pp. 16-18).
1923	<i>Velero II</i>	Socorro Clarión	Capt. Allan Hancock (in charge)	Exploration, photography	Discovered a large lava tunnel on the east side of Socorro. Narrative account by Banning (1925, pp. 28-38, 45-53).
1925	U.S.S. <i>Ortolan</i>	San Benedicto Socorro Roca Partida Clarión	G Dallas Hanna (in charge)	General zoological, botanical, and geological collecting, dredging, photography	California Academy of Sciences expedition to the Islas Revillagigedo and Islas Tres Marias. Hanna (1926, pp. 1-66).
1927 or 1928	not known	Socorro	not known	Sheep farming	For about one year a company operating out of Los Angeles (?) kept a sheep herder and his wife on Socorro. Guy Silva (personal communication).
1932	<i>Zaca</i>	Socorro Clarión	Harry S. Swarth (in charge)	General zoological and botanical collecting	Templeton Crocker-California Academy of Sciences expedition to the Islas Galápagos. Crocker (1933).
1933	<i>Progreso</i>	Socorro	Leon Furton (in charge)	Colonization study	Escuela Nacional de Agricultura expedition. Certain animals and plants were left on Socorro. Sánchez de la Peña (1948, p. 145).
1934	<i>Velero III</i>	Socorro Clarión	C. McLean Frazer (in charge)	Biology, photography	Two cruises. Allan Hancock expedition to the Islas Galápagos in the winter and spring and an early summer cruise to the Islas Revillagigedo. Frazer (1943, pp. 51-52).

TABLE 4 (Continued)

Year	Ship	Islands Visited	Investigator <sup>1)</sup>	Chief Collections, and/or Study	Notes and References <sup>2)</sup>
1936	Zaca	Clarión	William Beebe (in charge)	Dredging, trawling, fish	Templeton Crocker-Department of Tropical Research of the N.Y. Zoological Society expedition to the Gulf of California. Beebe (1937).
1938	U.S.S. Houston	Socorro	Waldo L. Schmitt	Fish	The presidential cruise of 1938. Schmitt (1939).
1939	Vetero III	Socorro Clarión	C. McLean Frazer (in charge)	Biology, photography	Allan Hancock expedition to the Canal Zone. Frazer (1943, p. 53).
1946	Zaca	Socorro	Carl L. Hubbs	Fish	Errol Flynn expedition to Mexican islands and Acapulco. Carl L. Hubbs (personal communication).
1948	Queretaro	Socorro	Investigator in charge not known	General exploration, guano study, photography	Expedition sponsored by the Club Cinegetico Coliman. Sánchez de la Peña (1948).
1948	Tehuantepec and Papaloapan	San Benedicto Socorro Roca Partida Clarión	Brig. Gen. de E. M. Rubén Calderón Aguilar (in charge)	General military and scientific observations, soils, photog- raphy, maps	Scientific and military expedition to the Mexican Pacific islands by the Escuela Superior de Guerra (1949, pp. 14-21, 159-163; Vivó Escoto, <i>Ibid.</i> , pp. 55-69). First soil analyses from Socorro and Clarión. Chemical analysis of water from the spring in Caleta Grayson.
1951	Lang Syne	Socorro	B. and P. Crowe	Exploration	Witnessed eruption of small cinder cone west of Lomas Colorados. Crowe (1955, p. 252).

TABLE 4 (Continued)

Year	Ship	Islands Visited	Investigator <sup>11</sup>	Chief Collections, and/or Study	Notes and References <sup>12</sup>
1952	<i>Marijean</i>	San Benedicto Socorro	D. H. Bates	Fish, photography	H. R. MacMillan fishing expedition to the Islas Galápagos. Photographs of San Benedicto were taken in February before the eruption in August. A privately printed booklet by Bates (1952) includes a translation of much of "Islas Revillagigedo" by Vivó Escoto (1949, pp. 55-69).
1952	<i>Observer</i>	San Benedicto	N. C. Bunker (in charge)	Geology, fish, photography, exploration of Volcán Bárcena	Woodrow Krieger—School of Tropical and Preventive Medicine of the College of Medical Evangelists expedition to the Islas Galápagos. A popular account of the exploration of Volcán Bárcena (Boquerón) was written by Richards and Walker (1954).
1953	<i>Paolina-T</i>	San Benedicto Socorro Roca Partida Clarión	B. H. Brattstrom, H. Dana, A. F. Richards	Biology, geology, soundings, submarine sampling, photography	University of California, Scripps Institution of Oceanography expedition. First rock samples from Roca Partida. Detailed soundings around islands.
1953	<i>Crest</i>	San Benedicto Socorro	A. F. Richards (in charge)	Underwater volcanic acoustics, botany, zoology, geology, chemistry, geology, soundings, photography	University of California, Scripps Institution of Oceanography expedition. An unpublished manuscript, "The Islas Revillagigedo Expedition of November, 1953," was prepared by members of the expedition. First known exploration by foot across the interior of Isla Socorro.

TABLE 4 (Continued)

Year	Ship	Islands Visited	Investigator <sup>1†</sup>	Chief Collections, and/or Study	Notes and References <sup>2</sup>
1954	<i>Papaloapan</i>	Socorro	Pablo G. Franco (in charge)	Climatology, soil chemistry, botany, photography	Universidad de Guadalajara expedition. Medina G. (1957).
1955	<i>Crest</i>	San Benedicto Socorro Clarión	A. F. Richards (in charge)	Botany, zoology, geology, soil chemistry, soundings, photography	University of California, Scripps Institution of Oceanography expedition.
1957	<i>Papaloapan</i> (?)	Socorro	Capitán de Navío D. Hernandez Corvajal	—	Establishment of a Mexican naval garrison on Socorro, which is located on the lava flow comprising Cabo Rule.
1957	<i>Stranger</i>	San Benedicto Socorro Roca Partida Clarión	A. F. Richards (in charge)	Botany, geology, soils, tide gauge installation (Socorro), soundings, dredging, photography	University of California, Scripps Institution of Oceanography—Instituto de Geofísica, Universidad Nacional de México, expedition (SIGRE).

## BIBLIOGRAPHY

The authors have tried to include all published references to the *Islas Revillagigedo* up to October, 1957, that could be personally checked, exclusive of maps, charts, and newspaper articles. In addition, early European historical and Mexican references have been included which the authors have not seen. All entries we have not examined are marked with an asterisk preceding the author's name. It is probable that a few isolated records have been overlooked; for example, a rare species of plant or animal from the islands may have been described in a monographic treatment of a specific group.

In some cases authors have mentioned general aspects of the biota of the islands in the introduction of a paper treating a particular phase or group of the biota. For example, many authors mention that there are birds on the islands. These comments, unless specific or pertinent, are not indexed separately in the subject index. Those publications discussing the general aspects of the biota of the islands will be found indexed under "General Description" or "General Natural History."

Some of the biological references cited have no specific *Revillagigedo* record (for example, Meek and Hildebrand, 1923-28), but they are a general review of a group in the region of the islands. Also, a few references either of general interest or applying to the zoogeography of the eastern Pacific are included even though they may not specifically mention the *Islas Revillagigedo*. Most of the biological references cited, however, do have *Revillagigedo* records.

We have not felt it necessary to cross-index junior or co-authors in the subject index.

## AUTHORS

## ADAMS, J. A. S.

1954. Uranium and thorium contents of volcanic rocks. *In* Nuclear geology. New York, John Wiley and Sons, Inc., pp. 89-98.

## ALLEN, W. E.

1933. Surface phytoplankton obtained by the Templeton Crocker Expedition of the California Academy of Sciences of 1932. *Transactions of the American Microscopical Society*, 52:101-102.

## ALMADA, FRANCISCO R.

1939. Diccionario de historia, geografía y biografía del Estado de Colima. Colima, Tipográficos "Moderna," 190 pp.

## ANONYMOUS

- \*1621. Miroir, Oost et West-Indical, Auquel sont descriptes les deux dernières Navigations, faictes, es Années 1614. 1615. 1617. & 1618. l'une par le

ANONYMOUS—*Cont'd.*

- renommé Guerrier de Mer, George de Spilbergen, par le Destroict de Magellan, & ainsi tout autor de toute la terre, avec toutes les Batailles données tant par terre que par eau. Icy sont aussi adioustées deux Histoires, l'une des Indes Orientales, l'autre des Indes Occidentales, avec le nombre des Navires, Forts, Soldats & Artillerie. L'autre faicte par Jacob le Maire, lequel au coste du Zud du Destroict de Magellan, a descouvert un nouveau Destroict. Avec la description de tuos Pays, Gens & Nations. Le tout embelli de belles Cartes & Figures a ce servantes. A Amsterdam, Chez Ian Iansz. sur l'Eau, a la Pas-carte: iv, 172 pp.
1901. Papers from the Hopkins Stanford Galápagos Expedition, 1898-1899. I. Introduction. *Proceedings of the Washington Academy of Science*, 3:363-364.
1952. Record volcano's sounds. *Science News Letter*, 62(22):351.
- 1953a. Volcano makes mud rain. *Ibid.*, 63(2):20.
- 1953b. San Benedicto wren joins extinct dodo bird. *Ibid.*, 63(20):308.
1957. Islas Revillagigedo. *Revista Técnica Obras Marítimas*, 10:49-53.

## ANTHONY, A. W.

- 1896a. Land birds at sea. *Osprey*, 1:57-58.
- 1896b. Eggs of the black, Socorro, and least petrels. *Nidologist*, 4:16-17.
- 1898a. Petrels of southern California. *Auk*, 15:140-144.
- 1898b. Avifauna of the Revillagigedo Islands. *Ibid.*, 15:311-318.
1900. Nesting habits of the Pacific Coast species of the genus *Ruffinus* (sic). *Ibid.*, 17:247-252.

## ARCE, MANUEL

1954. Misión en las Revillagigedo. *Revista de Revistas*, Agosto 22, 1954:18-25.

## \*ATLAS GEOGRÁFICO DE LA ESTADOS UNIDOS MEXICANOS

1946. Secretaría de Agricultura y Fomento, Direccion de Geografía, Meteorología y Hidrología, Tacumbaya, D. F.

## BANDA, LONGINOS

1862. Informe presentado al gobierno del Estado de Colima. *Boletín de la Sociedad Mexicana de Geografía y Estadística*, 9:183-186.

## BANNING, GEORGE HUGH

1925. In Mexican waters. Boston, Charles E. Lauriat Co., 196 pp.

## BARNARD, J. LAURENS

1954. Amphipoda of the family ampiliscidae collected in the eastern Pacific by the *Velero III* and *Velero IV*. *University of Southern California Publications, Allan Hancock Expeditions*, 18(1):1-137.

## BATES, D. H.

1952. Revilla Gigedo Islands Mexico. Portland, privately printed, 45 pp.

## BEEBE, WILLIAM

1937. The Templeton Crocker Expedition. II. Introduction, itinerary, lists of stations, nets, and dredges. *Zoologica*, 22(2):33-46.

BEEBE, WILLIAM—*Cont'd.*

1938. Zaca venture. New York, Harcourt Brace and Co., 303 pp.  
— and JOCELYN CRANE
1947. Eastern Pacific expedition of the New York Zoological Society. XXXVII.  
Deep sea ceratioid fishes. *Zoologica*, 31(11):151–182.  
— and MARY V. PYL
1944. Eastern Pacific expeditions of the New York Zoological Society. XXXIII.  
Pacific Myctophidae (fishes). *Ibid.*, 29(9):59–95.  
— and J. TEE-VAN
- 1941a. Eastern Pacific expeditions of the New York Zoological Society. XXIV.  
Fishes from the tropical eastern Pacific (from Cedros Island, Lower California; south to the Galápagos Islands and northern Peru), Part 1.  
Lancelets and hag-fishes. *Ibid.*, 26(14):89–91.
- 1941b. Eastern Pacific expeditions of the New York Zoological Society. XXV.  
Fishes from the tropical eastern Pacific (from Cedros Island, Lower California; south to the Galápagos Islands and northern Peru), Part 2.  
Sharks. *Ibid.*, 26(15):93–122.
- 1941c. Eastern Pacific expeditions of the New York Zoological Society. XXVIII.  
Fishes from the tropical eastern Pacific (from Cedros Island, Lower California; south to the Galápagos Islands and northern Peru), Part 3.  
Rays, mantas, and chimaeras. *Ibid.*, 26(26):245–280.

## BELCHER, EDWARD

1843. Narrative of a voyage round the world, performed in Her Majesty's Ship  
*Sulphur*, during the years 1836–1842, including details of the naval  
operations in China, from December 1840, to November 1841. 2 vols.,  
London, Henry Colburn; 1:viii, 387 pp.; 2:vii, 474 pp.

## BENT, A. C.

1948. Life histories of North American nuthatches, wrens, thrashers, and their  
allies. *Bulletin of the United States National Museum*, 195:1–475.

## BLAKE, EMMET R.

1953. Birds of Mexico. University of Chicago Press, xxix, 644 pp.

## BOGERT, CHARLES M., and JAMES A. OLIVER

1945. A preliminary analysis of the herpetofauna of Sonora. *Bulletin of the  
American Museum of Natural History*, 83(6):297–426.

## BONAR, LEE

1939. The Templeton Crocker Expedition of the California Academy of Sciences,  
1932. No. 38. Fungi from the Galápagos and other Pacific coastal islands.  
*Proceedings of the California Academy of Sciences*, 4th ser., 22(9):  
195–206.

## BOONE, LEE

1927. The littoral crustacea fauna of the Galápagos Islands. Part I. Brachyura.  
*Zoologica*, 8(4):127–288.

## BOULENGER, GEORGE A.

1885. Catalogue of the lizards of the British Museum (Natural History). British  
Museum (Natural History), London, 2:xiii, 1–497.



BRANDEGEE, T. S.

1898. New species of plants from Mexico. *Erythea*, 7:1-9.  
 1900. Voyage of the *Wahlberg*. *Zoe*, 5(2):19-28.

BRATTSTROM, BAYARD H.

1953. The Cactus of the Revillagigedo Islands, Mexico. *Cactus and Succulent Journal*, 25(6):181-182.  
 1955. Notes on the herpetology of the Revillagigedo Islands, Mexico. *American Midland Naturalist*, 54(1):219-229.  
 ——— and THOMAS R. HOWELL  
 1956. The birds of the Revilla Gigedo Islands, Mexico. *Condor*, 58(2):107-120.

BREWSTER, W.

1903. Breeding grounds of the black and Socorro petrels—A correction. *Auk*, 20:63-64.

BROCK, VERNON E.

1943. Distributional notes on the fishes of Lower California and the west coast of Mexico. II. *Copeia*, 2:130-131.

BURKENROAD, MARTIN D.

1937. The Templeton Crocker Expedition. XII. Sergestidae (Crustacea, Decapoda) from the Lower California region, with descriptions of two new species and some remarks on the organs of Pesta in Sergestes. *Zoologica*, 22(25):315-329.  
 1938. The Templeton Crocker Expedition. XIII. Penaeidae from the region of Lower California and Clarión Island, with descriptions of four new species. *Ibid.*, 23(3):55-91.

BURNEY, JAMES

- 1803- A chronological history of the discoveries in the South Sea or Pacific  
 1817. Ocean. 5 vols., London, n.p.  
 1803. 1. Commencing with an account of the earliest discovery of that sea by Europeans, and terminating with the voyage of Sir Francis Drake, in 1579, xx, 383 pp.  
 1806. 2. From the year 1579, to the year 1620, xiv, 482 pp.  
 1816. 4. To the year 1723, including a history of the buccaneers of America, xviii, 580 pp.

BURT, CHARLES E., and GEORGE S. MYERS

1942. Neotropical lizards in the collection of the Natural History Museum of Stanford University. *Stanford University Publications, University Series, Biological Sciences*, 8(2):1-52.

CHAPMAN, F. M., and L. GRISCOM

1924. The house wrens of the genus *Troglodytes*. *Bulletin of the American Museum of Natural History*, 50(4):279-304.

## CLARK, HUBERT L.

1948. A report on the Echini of the warmer eastern Pacific, based on the collections of the *Velero III*. *University of Southern California Publications, Allan Hancock Pacific Expeditions*, 8(5):225-351.

## CLARK, LOIS

1953. Some Hepaticae from the Galápagos, Cocos, and other Pacific coast islands. *Proceedings of the California Academy of Sciences*, 4th ser., 27(18): 593-624.

## COLNETT, JAMES

1798. A voyage to the south Atlantic and round Cape Horn into the Pacific Ocean, for the purpose of extending the spermaceti whale fisheries, and other objects of commerce, by ascertaining the ports, bays, harbours, and anchoring berths, in certain islands and coasts of those seas, at which the ships of the British merchants might be refitted. London, W. Bennett, 179 pp.

## CONTRERAS, FRANCISCO

1926. Informe sobre la expedición del "*Ortolan*," rendido a la dirección de estudios biológicas. *Memorias (y Revista) de la Sociedad Científica "Antonio Alzate"*, 45:13-35.

## COPE, E. D.

1872. Description of the common lizard of Socorro. *Proceedings of the Boston Society of Natural History*, 14:303.
1900. The Crocodilians, lizards, and snakes of North America. *Report of the United States National Museum*, 1898:153-1270.

## CRANE, JOCELYN

1937. The Templeton Crocker Expedition. III. Brachygnathous crabs from the Gulf of California and the west coast of Lower California. *Zoologica*, 22(3):47-78.
1941. Eastern Pacific expeditions of the New York Zoological Society. XXVI. Crabs of the genus *Uca* from the west coast of Central America. *Ibid.*, 26(19):145-208.
1947. Eastern Pacific expeditions of the New York Zoological Society. XXXVIII. Intertidal brachygnathous crabs from the west coast of tropical America, with special reference to ecology. *Ibid.*, 32(9):69-95.

## CROCKER, TEMPLETON

1933. The Templeton Crocker Expedition of the California Academy of Sciences. 1932. No. 2. Introductory Statement. *Proceedings of the California Academy of Sciences*, 4th ser., 21(2):3-12.

## CROWE, BILL and PHYLLIS

1955. Heaven, hell and salt water. London, Adlard Coles Ltd., 264 pp.

## CUSHMAN, JOSEPH A.

- 1932- The foraminifera of the tropical Pacific collections of the *Albatross*,

CUSHMAN, JOSEPH A.—*Cont'd.*

1942. 1899–1900. *Bulletin of the United States National Museum*, 161: Part 1. Astrorhizidae to Trochamminidae, 1932:iv, 88 pp.; Part 2. Lagenidae to Alveolinellidae, 1933:iv, 79 pp.; Part 3. Helerohellicidae and Buliminidae, 1942:v, 67 pp.
- and IRENE McCULLOCH
1939. A report on some arenaceous Foraminifera. *University of Southern California Publications, Allan Hancock Pacific Expeditions*, 6(1):1–113.
1940. Some Nonionidae in the collections of the Allan Hancock Foundation. *Ibid.*, 6(3):145–178.
1942. Some Virgulinae in the collections of the Allan Hancock Foundation. *Ibid.*, 6(4):179–230.
1948. The species of *Bulimina* and related genera in the collections of the Allan Hancock Foundation. *Ibid.*, 6(5):231–294.
1950. Some Lagenidae in the collections of the Allan Hancock Foundation. *Ibid.*, 6(6):295–364.

## DALL, W. H.

1900. Additions to the insular land-shell faunas of the Pacific coast, especially of the Galápagos and Cocos Is. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 52:88–105.
1909. Report on a collection of shells from Peru, with a summary of the littoral marine Mollusca of the Peruvian Zoological Province. *Proceedings of the United States National Museum*, 37(1704):147–294.
1926. Expedition to the Revillagigedo Islands, Mexico, in 1925. Land shells of the Revillagigedo and Tres Marias Islands, Mexico. *Proceedings of the California Academy of Sciences*, 4th ser., 15(15):35–36.
- and W. H. OCHSNER
1928. Landshells of the Galápagos Islands. *Ibid.*, 17(5):141–185.

## DAWSON, E. YALE

1952. Resumen de las investigaciones recientes sobre algas marinas de la Costa Pacífica de México, con una sinopsis de la literatura, sinonimia, y distribución de las especies descritas. *Revista de la Sociedad Mexicana de Historia Natural*, 13(1–4):97–197.
1954. The marine flora of Isla San Benedicto following the volcanic eruption of 1952–1953. *University of Southern California Publications, Allan Hancock Foundation, Occasional Paper* 16:1–25.
1957. Notes on eastern Pacific insular marine algae. *Los Angeles County Museum, Contributions in Science*, 8:1–8.

## DEICHMANN, ELIZABETH

1937. The Templeton Crocker Expedition. IX. Holothurians from the Gulf of California, the west coast of Lower California, and Clarión Island. *Zoologica*, 22(10):161–176.
1938. Eastern Pacific expeditions of the New York Zoological Society. XVI. Holothurians from the western coasts of Lower California and Central America, and from the Galápagos Islands. *Ibid.*, 23(18):361–387.

DEICHMANN, ELIZABETH—*Cont'd.*

1941. The Holothurioidea collected by the *Velero III* during the years 1932–1938. Part I. Dendrochirota. *University of Southern California Publications, Allan Hancock Pacific Expeditions*, 8(3):61–195.

\*DERROTERO DE LAS COSTAS DE LA REPUBLICA MEXICANA

1939. Secretaría de Comunicaciones y Obras Públicas, Dirección General de Marina, Puertos, y Faros, S.C.O.P. Narvarte, México, D. F.

DEWEY, GEORGE

1874. Remarks on the coast of Lower California and Mexico. *United States Hydrographic Office*, Publication no. 56, 60 pp.

DIETZ, ROBERT S. (edited by D. G. Kelley)

1953. Boquerón. *Pacific Discovery*, 6(1):24–27.

— and ADRIAN F. RICHARDS

- 1953a. Volcanic eruption of San Benedicto Island, Mexico (Abstract). *Bulletin of the Geological Society of America*, 64(12):p. 5103.

- 1953b. Eruption on San Benedicto Island, Mexico, 1952 (Abstract). Eighth Pacific Science Congress, Abstracts of paper, supplement: 3–4.

DODGE, CARROL W.

1936. Lichens of the G. Allan Hancock Expedition of 1934, collected by Wm. R. Taylor. *University of Southern California Publications, Allan Hancock Pacific Expeditions*, 3(3):33–46.

DROUET, FRANCIS

1936. Myxophyceae of the G. Allan Hancock Expedition of 1934, collected by Wm. R. Taylor. *Ibid.*, 2(2):15–31.

DURIHAM, J. WYATT

1947. Corals from the Gulf of California and the north Pacific coast of America. *Geological Society of America, Memoir*, 20:1–68.

1950. Cenozoic marine climates of the Pacific coast. *Bulletin of the Geological Society of America*, 61(11):1243–1264.

— and J. LAURENS BARNARD

1952. Stony corals of the eastern Pacific collected by the *Velero III* and *Velero IV*. *University of Southern California Publications, Allan Hancock Pacific Expeditions*, 16(1):1–110.

EARDLEY, A. J.

1954. Tectonic relations of North and South America. *Bulletin of the American Association of Petroleum Geologists*, 38(5):707–773.

ESCUELA SUPERIOR DE GUERRA

1949. Mares e islas mexicanos del Pacífico, resultado de la expedición científico-militar de la Escuela Superior de Guerra, Mayo–Junio, 1948. Mexico, Published under the direction of General Brigadier de E. M. Rubén Calderón Aguilar, Director, 170 pp.

FISHER, WALTER K.

1952. Sipunculid worms of California and Baja California. *Proceedings of the United States National Museum*, 102(3306):371–450.

FOWLER, HENRY W.

1938. The fishes of the George Vanderbilt South Pacific Expedition, 1937. *Academy of Natural Sciences of Philadelphia. Monograph*, 2:1-349.
1944. Results of the fifth George Vanderbilt Expedition (1941). Bahamas, Caribbean Sea, Panama, Galápagos Archipelago, and Mexican Pacific Islands. The fishes. *Ibid.*, 6:57-530.

FRASER, C. MCLEAN

1938. Hydroids of the 1934 Allan Hancock Pacific Expedition. *University of Southern California Publications, Allan Hancock Pacific Expeditions*, 4(1):1-105.
1939. Distribution of the hydroids in the collections of the Allan Hancock Expeditions. *Ibid.*, 4(4):155-170.
1940. Hydroid distribution in the Pacific. *Proceedings of the Sixth Pacific Science Congress*, 3:495-500.
1943. General account of the scientific work of the *Velero III* in the eastern Pacific, 1931-41. *University of Southern California Publications, Allan Hancock Pacific Expeditions*, 1(1-3):1-445.
1948. Hydroids of the Allan Hancock Pacific Expedition since March, 1938. *Ibid.*, 4(5):179-335.

FRIEDMANN, H., L. GRISCOM, and R. T. MOORE

1950. Distributional check-list of the birds of Mexico. *Pacific Coast Avifauna*, 29:1-202.

\*GALVAOM

1731. Tratado dos descobrimentos, Gomara, Congreso de México, fol. 116.

GARCÍA CUBAS, ANTONIO

- 1888- Diccionario geográfico, histórico y biográfico de los Estados Unidos Mexicanos. 5 vols., México, Oficina Tipográfica de la Secretaría de Fomento.
1888. 2. 1-502.
1890. 4. 1-480.
1891. 5. 1-567.

GARMAN, SAMUEL

1899. Concerning a species of lizard from Clipperton Island. *Proceedings of the New England Zoological Club*, 1:59-62.

GARTH, JOHN S.

1940. Some new species of Brachyuran crabs from Mexico and the Central and South American mainland. *University of Southern California Publications, Allan Hancock Pacific Expeditions*, 5(3):51-128.
- 1946a. Littoral Brachyuran fauna of the Galápagos Archipelago. *Ibid.*, 5(10):341-602.
- 1946b. Distribution studies of Galápagos Brachyura. *Ibid.*, 5(11):603-638.

GENTRY, HOWARD S.

1949. Land plants collected by the *Velero III*, Allan Hancock Pacific Expeditions, 1937-1941. *Ibid.*, 13(2):7-245.

## GIESBRECHT, W.

1895. Reports on the dredging operations off the west coast of Central America to the Galápagos, to the west coast of Mexico, and in the Gulf of California, in charge of Alexander Agassiz, carried on by the U. S. Fish Commission steamer *Albatross* during 1891, Lieut. Commander Z. L. Tanner, U.S.N., commanding. XVI. Die Pelogischen Copepoden. *Bulletin of the Museum of Comparative Zoology, Harvard University*, 25(12):243-263.

## GIFFORD, E. W.

1913. The birds of the Galápagos Islands, with observations on the birds of Cocos and Clipperton Islands (Columbiformes to Pelecaniformes). *Proceedings of the California Academy of Sciences*, 4th ser., 2:1-132.

## GILBERT, CHARLES H.

- 1891a. Scientific results of explorations by the U. S. Fish Commission steamer *Albatross*. XII. A preliminary report on the fish collected by the steamer *Albatross* on the Pacific coast of North America during the year 1889, with descriptions of twelve new genera and ninety-two new species. *Proceedings of the United States National Museum*, 13(797):49-126.
- 1891b. Scientific results of explorations by the U. S. Fish Commission steamer *Albatross*. XXII. Descriptions of thirty-four new species of fish collected in 1888 and 1889, principally among the Santa Barbara Islands and in the Gulf of California. *Ibid.*, 14(880):539-566.
1897. Descriptions of twenty-two new species of fishes collected by the steamer *Albatross* of the United States Fish Commission. *Ibid.*, 19(1115):437-457.

## GODMAN, FREDERICK DU CRANE

- 1907- A monograph of the petrels (order *Tubinares*). London, Witherby and  
1910. Co., lv, 381 pp.

## GÓMEZ MONCADA, MANUEL

1958. Isla Socorro, *Revista Técnica obras Marítimas*, 21:22-25.

## GRAYSON, ANDREW J. (edited by Geo. N. Lawrence)

1872. Exploring expedition to the Island of Socorro, from Mazatlan, Mexico. In The physical geography and natural history of the islands of the Tres Marias and of Socorro, off the western coast of Mexico. *Proceedings of the Boston Society of Natural History*, 14:287-297.

## \*GRIJALVA

Hist. de la Orden de S. Aug. en la N. Espan. Edad. 1, cap. 34 and seg.

## GRINNELL, JOSEPH

1928. A distributional summation of the ornithology of Lower California. *University of California Publications in Zoology*, 32(1):1-300.

## HANNA, G DALLAS

1925. Was there a Pacific continent? *Science*, 62(1613):491-492.

HANNA, G. DALLAS—*Cont'd.*

1926. Expedition to the Revillagigedo Islands, Mexico, in 1925. *Proceedings of the California Academy of Sciences*, 4th ser., 15(1):113 pp.
1927. Geology of west Mexican Islands. *Pan-American Geologist*, 48(1):1-24.
1932. The Templeton Crocker Expedition of the California Academy of Sciences. *Science*, 76 (1974):375-377.
- and A. M. STRONG
1949. West American mollusks of the genus *Conus*. *Proceedings of the California Academy of Sciences*, 4th ser., 26(9): 247-322.

## HARTMAN, OLGA

1939. Polychaetous annelids. Part I. Aphroditidae to Pisionidae. *University of Southern California Publications, Allan Hancock Pacific Expeditions*, 7(1):1-156.
1940. Polychaetous annelids. Part II. Chrysopetalidae to Goniadidae. *Ibid.*, 7(3):173-288.
1941. Polychaetous annelids. Part IV. Pectinariidae, with a review of all species from the Western Hemisphere. *Ibid.*, 7(5):325-346.
1944. Polychaetous annelids. Part V. *Eunicea*. *Ibid.*, 10(1):1-237.
1946. Polychaetous annelids. Part VI. Paraonidae, Magelonidae, Longosomidae, Ctenodrilidae, and Sabellariidae. *Ibid.*, 10(3):311-389.
- 1947a. Polychaetous annelids. Part VII. Capitellidae. *Ibid.*, 10(4):391-481.
- 1947b. Polychaetous annelids. Part VIII. Pilargiidae. *Ibid.*, 10(5):483-523.
1950. Goniadidae, Glyceridae, and Nephtyidae. *Ibid.*, 15(1):1-181.

## HEIDEMANN, OTTO

1901. Papers from the Hopkins Stanford Galápagos Expedition, 1898-1899. I. Entomological results (1). Hemiptera. *Proceedings of the Washington Academy of Sciences*, 3:336-370.

## HELLER, EDMUND, and ROBERT E. SNODGRASS

1903. Papers from the Hopkins Stanford Galápagos Expedition, 1898-1899, XV. New fishes. *Proceedings of the Washington Academy of Sciences*, 5: 189-229.

## HENDRICK, JOYCE

1942. Some lichens from the American tropics collected by Wm. R. Taylor. *University of Southern California Publications, Allan Hancock Pacific Expeditions*, 3(9): 51-64.

## HERRE, ALBERT W.

1940. Distribution of fish in the tropical Pacific. *Proceedings of the Sixth Pacific Science Congress*, 3:587-592.

## \*HERRERA

Hist. de las Ind. Occid., Dec. 7. lib. 5.

## HEITLEIN, LEO G.

1938. A note on some species of marine mollusks occurring in both Polynesia

HERTLEIN, LEO G.—*Cont'd.*

- and the western Americas. *Proceedings of the American Philosophical Society*, 78(2):303-312.
- and A. M. STRONG
1940. Eastern Pacific expeditions of the New York Zoological Society. XXII. Mollusks from the west coast of Mexico and Central America. Part 1. *Zoologica*, 25(25):369-430.
1943. *Ibid.* XXXII. Part 2. *Ibid.*, 28(19):149-168.
- 1946a. *Ibid.* XXXIV. Part 3. *Ibid.*, 31(5):53-76.
- 1946b. *Ibid.* XXXV. Part 4. *Ibid.*, 31(8):93-120.
1947. *Ibid.* XXXVI. Part 5. *Ibid.*, 31(10):129-150.
1948. *Ibid.* XXXIX. Part 6. *Ibid.*, 33(13):163-198.
- 1949a. *Ibid.* XL. Part 7. *Ibid.*, 34(9):63-97.
- 1949b. *Ibid.* XLI. Part 8. *Ibid.*, 34(19):239-258.
1950. *Ibid.* XLII. Part 9. *Ibid.*, 35(19):217-252.
1951. *Ibid.* XLIII. Part 10. *Ibid.*, 36(5):67-120.

## HITCHCOCK, A. S.

1935. The Templeton Crocker Expedition of the California Academy of Sciences, 1932, No. 24. New species of grasses from the Galápagos and Revillagigedo Islands. *Proceedings of the California Academy of Sciences*, 4th ser., 21(24):295-300.

## HOLTHUIS, LIPKE B.

1951. A general revision of the Palamonidae (Crustacea, Decapoda, Natantia) of the Americas. I. The subfamilies Euryrhynchinae and Pontiinae. *University of Southern California Publications, Allan Hancock Foundation, Occasional Paper* 11:1-332.
1952. A general revision of the Palamonidae (Crustacea, Decapoda, Natantia) of the Americas. II. The subfamily Paleamoninae. *Ibid.*, 12:1-396.

## HOWE, MARSHALL A.

1934. The Templeton Crocker Expedition of the California Academy of Sciences, 1932, No. 17. The Hepaticae (chiefly Riccia and Anthocerotocae) of the Galápagos Islands and the coast and islands of Central America and Mexico. *Proceedings of the California Academy of Sciences*, 4th ser., 21(17):199-210.

## HUBBS, CLARK

1953. Revision of the Eastern Pacific fishes of the clinid genus *Labrisomus*. *Zoologica*, 38(9):113-136.

## HUMBOLDT, ALEXANDER

1811. Political essay on the kingdom of New Spain. Translated from the original French by John Black. 2 vols., London, Longman, Hurst, Rees, Orne and Brown, and H. Colburn. 1:i-xii, i-cxv, 1-221; 2:1-377.

## (IMRAY, JAMES)

1853. Sailing directions for the west coast of North America. London, James Imray, 232 pp.



IMRAY, JAMES

1868. Sailing directions for the west coast of North America between Panama and Queen Charlotte Islands. 2nd Ed., London, James Imray and Sons, 380 pp.

INGRAM, WILLIAM MARCUS

1948. The Cypraeid fauna of the Galápagos Islands. *Proceedings of the California Academy of Sciences*, 4th ser., 26(7):135-145.

JOHNSTON, IVAN M.

1931. The flora of the Revillagigedo Islands. *Ibid.*, 20(2):9-104.

JORDAN, D. S., and B. W. EVERMANN

- 1896- The fishes of North and Middle America. *Bulletin of the United States*

1900. *National Museum*, 47:1-3313.

— and C. H. GILBERT

1881. Notes on a collection of fishes, made by Lieut. Henry E. Nichols, U.S.N. on the west coast of Mexico, with descriptions of new species. *Proceedings of the United States National Museum*, 4:225-233.

— and R. C. MCGREGOR

1898. List of fishes collected at the Revillagigedo Archipelago and neighboring islands. *Report of the Commissioner, U.S. Commission of Fish and Fisheries*, 24:271-284.

KAEDING, H. B.

1905. Birds from the west coast of Lower California and adjacent islands. *Condor*, 7:105-111, 134-138.

LALICKER, C. G., and IRENE McCULLOCH

1940. Some Textulariidae of the Pacific Ocean. *University of Southern California Publications, Allan Hancock Pacific Expeditions*, 6(2):115-143.

LAMB, C. C.

1925. The Socorro Warbler added to the A. O. U. checklist. *Condor*, 27:36-37.

LAWRENCE, GEORGE W.

1871. Descriptions of new species of birds from Mexico, Central America, with a note on *Rallus longirostris*. *Annals of the Lyceum of Natural History of New York*, 10:1-21.

1872. On the physical geography and natural history of the islands of Tres Marias and of Socorro, off the western coast of Mexico. *Proceedings of the Boston Society of Natural History*, 14:261-302.

LIGHT, S. F.

1930. Termites collected by T. T. Craig on Socorro Island. *Pan-Pacific Entomologist*, 6:178-180.

1935. The Templeton Crocker Expedition of the California Academy of Sciences, 1932. No. 20. The Termites. *Proceedings of the California Academy of Sciences*, 4th ser., 21(20):233-258.

## LINDER, D. H.

1934. The Templeton Crocker Expedition of the California Academy of Sciences, 1905-1906. XII. A review of the albatrosses, petrels, and diving petrels. *Ibid.*, 21(18):211-222.

## LOOMIS, L. M.

1918. Expedition of the California Academy of Sciences to the Galápagos Islands, 1905-1906. XII. A review of the albatrosses, petrels, and diving petrels. *Ibid.*, 2(2):1-187.

## MCLELLAN, MARY E.

1925. Expedition of the California Academy of Sciences to the Revillagigedo Islands. *Science*, 62(1599):171-173.
1926. Expedition to the Revillagigedo Islands, Mexico, in 1925. VI. The birds and mammals. *Proceedings of the California Academy of Sciences*, 4th ser., 15:279-322.

## MANN, ALBERT

1907. Report on the diatoms of the *Albatross* voyages in the Pacific Ocean. 1880-1904. *Contributions of the United States National Herbarium*, 10(5):221-242.

## MANter, HAROLD W.

- 1940a. Digenetic trematodes of fishes from the Galápagos Islands and the neighboring Pacific. *University of Southern California Publications, Allan Hancock Pacific Expeditions*, 2(14):329-497.
- 1940b. The geographical distribution of Digenetic trematodes of marine fishes of the tropical American Pacific. *Ibid.*, 2(16):531-547.

## \*MAY, JAN CORNELISZ

See Anonymous, 1621.

## MEDINA G., MANUEL

1957. Memoria de la expedición científica a las Islas Revillagigedo. Guadalajara Imprenta Universitaria, 244 pp.

## MEEK, S. E. and S. F. HILDEBRAND

- 1923- The marine fishes of Panama. *Field Museum of Natural History, Zoological Series*, 15:1-1045.

## MEINERTZHAGEN, R.

1926. Introduction to a review of the genus *Corvus*. *Novitates Zoologicae*, 33:57-121.

## MENARD, HENRY W.

- 1955a. Fractures in the Pacific floor. *Scientific American*, 193(1):36-41.
- 1955b. Deformation of the northeastern Pacific basin and the west coast of North America. *Bulletin of the Geological Society of America*, 66(9):1149-1198.

MESERVE, FRANK C.

1938. Some monogenetic trematodes from the Galápagos Islands and the neighboring Pacific. *University of Southern California Publications. Allan Hancock Pacific Expeditions*, 2(5):31-89.

MEXICO

1955. Constitución política de los Estados Unidos Mexicanos. Art. 42 (p. 37), Mexico, Editorial Porrúa, S. A., 4th ed., 100 pp.

MITCHELL, JULIO

1933. Principales islas del Golfo de California y el Archipiélago de las Revillagigedo. *Primer Centenario de la Sociedad Mexicana de Geografía Estadística, 1833-1933*, 1:103-126.

MITTLEMAN, M. B.

1942. A summary of the iguanid genus *Urosaurus*. *Bulletin of the Museum of Comparative Zoology, Harvard University*, 91(2):103-181.

MORENO RESÉNDIZ, SAÚL

1948. Observaciones acerca de la Isla del Socorro del Archipiélago de Revillagigedo. *Revista de Economía*, 11(4):25-28.

MORRELL, BENJAMIN, JR.

1832. A narrative of four voyages to the South Sea, north and south Pacific Ocean, Chinese Sea, Ethiopic and southern Atlantic Ocean, Indian and Antarctic Ocean, from the year 1822 to 1831. New York, J and J Harper, 492 pp.

MUÑOZ LUMBIER, MANUEL

1919. Algunos datos sobre las islas Mexicanas. *Anales del Instituto Geológico de México*, 7:1-56.
1946. Las Islas Mexicanas. Biblioteca Enciclopédica Popular. Tomo 117, Mexico, Secretaría de Educación Pública, viii, 126 pp.

MYERS, GEORGE S.

1940. The fish fauna of the Pacific Ocean, with especial references to zoogeographical regions and distribution as they affect the international aspects of the fisheries. *Proceedings of the Sixth Pacific Science Congress*, 3:201-210.

OBERHOLSER, HARRY C.

1898. A revision of the wrens of the genus *Thryomanes* Sclater. *Proceedings of the United States National Museum*, 21(1153):421-450.
1904. A review of the wrens of the genus *Troglodytes*. *Ibid.*, 27(1354):197-210.
- 1917a. Notes on North American birds, III. *Auk*, 34:465-470.
- 1917b. Notes on the genus *Puffinus* Brisson. *Ibid.*, 34:471-475.
- 1917c. A review of the subspecies of the leach petrel, *Oceanodroma leucorhoa* (Vieillot). *Proceedings of the United States National Museum*, 54(2230):165-171.
1918. The common ravens of North America. *Ohio Journal of Science*, 18:213-225.

## ORR, ROBERT T.

1940. The distribution of the more important marine mammals of the Pacific Ocean, as it affects their conservation. *Proceedings of the Sixth Pacific Science Congress*, 3:217-222.

## ORTENBURGER, A. I.

1923. A note on the genera *Coluber* and *Masticophis*, and a description of a new species of *Masticophis*. *Museum of Zoology, University of Michigan, Occasional Paper*, 139:1-7.
1928. The whip snakes and racers, genera *Masticophis* and *Coluber*. *Memoirs of the University of Michigan*, 1:1-247.

## ORTON, GRACE L.

1955. Separation of eggs of synentognath and allotriognath fishes in early embryonic stages. *California Fish and Game*, 41(1):105-106.

## OSBURN, RAYMOND C.

1950. Bryozoa of the Pacific coast of America. Part I. Cheilostomata Anasca. *University of Southern California Publications, Allan Hancock Pacific Expeditions*, 14(1):1-269.
1952. Bryozoa of the Pacific coast of America. Part II. Cheilostomata Ascophora. *Ibid.*, 14(2):270-611.
1953. Bryozoa of the Pacific coast of America. Part III. Cyclostomata, Ctenostomata, Entoprocta, and addenda. *Ibid.*, 14(3):612-841.

## PILSBRY, HENRY A.

1898. A new land shell from Clarión Island. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 50: p. 354.

## \*RAMUSIO'S COLLECTION

1613. Edition of Venice, 1:370-375.

## RATHBUN, MARY J.

1924. Brachyuran crabs collected by the Williams Galápagos Expedition, 1923. *Zoologica*, 5(14):153-159.
1937. The Oxystomatous and allied crabs of America. *Bulletin of the United States National Museum*, 166:vi, 278 pp.

## REHN, JAMES A. G.

1913. Descriptions and records of South American Orthoptera, with the description of a new subspecies from Clarión Island. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 65:82-113.

## REVERE, JOSEPH WARREN

1947. Naval duty in California (reprint of: A tour of duty in California. New York, C. S. Francis Co., 1849). Oakland, Biobooks, 245 pp.

## RICHARDS, ADRIAN F.

1953. Continued volcanic activity at San Benedicto Island, Mexico. *Volcano Letter (Hawaii)*, 519: p. 7.

RICHARDS, ADRIAN F.—*Cont'd.*

1956. Volcanism in eastern Pacific basin: 1945–1955 (Abstract). Resúmenes de los trabajos presentados, 20th International Geological Congress: p. 18.
- 1957a. Geology, volcanology, and bathymetry of Isla San Benedicto, Mexico. Unpublished Ph.D. Dissertation, University of California, Los Angeles, 225 pp.
- 1957b. Geology of the Islas Revillagigedo, Mexico (Abstract). *Bulletin of the Geological Society of America*, 68(12):p. 1843.
- 1957c. Identification of Isla San Benedicto, Mexico, pumice on islands in the central Pacific Ocean (Abstract). *Bulletin of the Geological Society of America*, 68(12):p. 1785.
- 1958a. Volcanism in eastern Pacific Ocean basin: 1945–1955. *Proceedings of the 20th International Geological Congress*, in press.
- 1958b. Transpacific distribution of floating pumice from Isla San Benedicto, Mexico. *Deep-sea Research*, 5:29–35.
- and ROBERT S. DIETZ
1956. Eruption of Bárcena Volcano, San Benedicto Island, Mexico. *Proceedings of the Eighth Pacific Science Congress*, 2:157–176.
- and LEWIS WAYNE WALKER
1954. Operation cremation. *Natural History*, 63(2):56–64.

RIDGEWAY, ROBERT

1883. Catalogue of the aquatic and fish-eating birds exhibited by the United States National Museum at the International Fisheries Exhibition, London, 1883. *Bulletin of the United States National Museum*, 27:139–184.
1884. Descriptions of some new North American birds. *Proceedings of the Biological Society of Washington*, 2:89–95.
1887. A manual of North American birds. Philadelphia, J. B. Lippincott Co., 631 pp.

RUST, HELEN

1955. A report on the family Archidae (Pelecypoda). *University of Southern California Publications, Allan Hancock Pacific Expeditions*, 20(2): 177–248.

SÁNCHEZ DE LA PEÑA, MARIANO

1948. Datos sobre la reciente expedición al archipiélago de “Revillagigedo.” *Boletín de la Sociedad Mexicana de Geografía y Estadística*, 65(1):141–167.

SCAMMON, CHARLES M.

1874. The marine mammals of the north-western coast of North America described and illustrated: together with an account of the American whale-fishery. San Francisco, John H. Carmany and Co., New York, G. P. Putnam's Sons, 1–319, v pp.
- and EDWARD DRINKER COPE
1869. On the Cetaceans of the west coast of North America. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 21:13–63.

## SCHMIDT, KARL P.

1922. The amphibians and reptiles of Lower California and neighboring islands. *Bulletin of the American Museum of Natural History*, 46(11): 607-707.

## SCHMITT, WALDO L.

1939. The presidential cruise of 1938. In Exploration and fieldwork of the Smithsonian Institution in 1938. Smithsonian Publication 3525:3-14.
1940. The Stomatopods of the west coast of America based on collections made by the Allan Hancock Expeditions, 1933-38. *University of Southern California Publications, Allan Hancock Pacific Expeditions*, 5(4):129-226.

## SCHOTT, CHARLES A.

1883. Terrestrial magnetism—Collection of results for declination, dip and intensity, from observations made by the United States Coast and Geodetic Survey between 1833 and 1882, July. In Report of the United States Coast and Geodetic Survey showing the progress of the work during the fiscal year ending with June, 1881. Appendix 9, United States Coast and Geodetic Survey: 159-224.

## SCHULTZ, LEONARD P., EARL S. HERALD, ERNEST A. LACHNER, ARTHUR D. WELANDER, and LOREN P. WOODS

1953. Fishes of the Marshall and Marianas Islands. *Bulletin of the United States National Museum*, 202:xxxii, 1-685 pp.

## SECRETARÍA DE AGRICULTURA Y FOMENTO

1934. Acuerdo que declara no colonizables los terrenos de la isla Socorro del archipiélago de Revillagigedo. In Diario Oficial, México, Sección 2, 86 (37), 24 Octubre de 1934: 1089-1090.

## SETCHELL, W. A.

1937. The Templeton Crocker Expedition of the California Academy of Sciences, 1932. No. 34. Report on the Sargassums. *Proceedings of the California Academy of Sciences*, 4th ser., 22(5):127-158.

— and N. L. GARDNER

1930. Marine algae of the Revillagigedo Islands expedition in 1925. *Ibid.*, 19(11): 109-215.
1937. A preliminary report on the algae. The Templeton Crocker Expedition of the California Academy of Sciences, 1932. No. 31. *Ibid.*, 22(2):65-98.

## SLEVIN, JOSEPH R.

1926. Notes on a collection of reptiles and amphibians from the Tres Marias and Revillagigedo Islands, and west coast of Mexico, with description of a new species of *Tantilla*. *Ibid.*, 15(3):195-207.
1931. Log of the schooner "Academy." *Occasional Papers of the California Academy of Sciences*, 17:1-162.

## SMITH, HOBART M., and E. H. TAYLOR

1945. An annotated checklist and key to the snakes of Mexico. *Bulletin of the United States National Museum*, 187:1-239.

SMITH, HOBART M., and E. H. TAYLOR—*Cont'd.*

1951. An annotated checklist and key to the reptiles of Mexico, exclusive of the snakes. *Ibid.*, 199:1-253.

SNODGRASS, JAMES M., and ADRIAN F. RICHARDS

1956. Observations of underwater volcanic acoustics at Bárcena Volcano, San Benedicto Island, Mexico, and in Shelikof Strait, Alaska. *Transactions of the American Geophysical Union*, 37(1):97-104.

SNODGRASS, ROBERT E., and E. HELLER

1902. Papers from the Hopkins Stanford Galápagos Expedition, 1898-1899. XI. The birds of Clipperton and Cocos Islands. *Proceedings of the Washington Academy of Science*, 4:501-520.
1904. Papers from the Hopkins Stanford Galápagos Expedition, 1898-1899. XVI. Birds. *Ibid.*, 5:231-372.
1905. Papers from the Hopkins Stanford Galápagos Expedition, 1898-1899. XVII. Shore fishes of the Revillagigedo, Clipperton, Cocos, and Galápagos Islands. *Ibid.*, 6:333-427.

SOOT-RYEN, TRON

1955. A report on the family Mytilidae (Pelecypoda). *University of Southern California Publications, Allan Hancock Pacific Expeditions*, 20(1):1-174.

STEEER, WILLIAM C.

1946. The Bryophyta of the Allan Hancock Expedition of 1939. *Ibid.*, 13(1):1-4.

STEJNEGER, L.

1901. Description of a new species of snake from Clarión Island, west coast of Mexico. *Proceedings of the United States National Museum*, 23:715-717.

STEARNS, ROBERT E. C.

1894. The shells of the Tres Marias and other localities along the shores of Lower California and the Gulf of California. *Ibid.*, 17:139-204.

STRONG, A. M., and G. D. HANNA

1930. Marine Mollusca of the Revillagigedo Islands, Mexico. *Proceedings of the California Academy of Sciences*, 4th ser., 19(2):7-12.

SVENSON, H. K.

1939. The Templeton Crocker Expedition of the California Academy of Sciences, 1932. No. 37. The Cyperaceae. *Ibid.*, 22(8):187-193.

TAKI, ISAO

1940. Chitons in the Pacific Ocean. *Proceedings of the Sixth Pacific Science Congress*, 3:487-491.

TAMAYO, JORGE L.

1949. Geografía general de México. Geografía física, 2 vols., Mexico, n.p., 1: i-viii, 1-628; 2:1-583.

TANNER, WILMER W.

1944. A taxonomic study of the genus *Hypsiglena*. *Great Basin Naturalist*, 5(3-4):25-92.

## TANNER, Z. L.

1892. Report upon the investigations of the United States Fish Commission steamer *Albatross* for the year ending June 30, 1889. In *Report of the Commissioner for 1888*, Part 16, United States Commission of Fish and Fisheries: 395-512.

## TATTERSALL, WALTER M.

1951. A review of the Mysidacea of the U. S. National Museum. *Bulletin of the United States National Museum*, 201:x, 1-292.

## TAYLOR, WILLIAM R.

1945. Pacific marine algae of the Allan Hancock Expeditions to the Galápagos Islands. *University of Southern California Publications, Allan Hancock Pacific Expeditions*, 12:1-518.

## TEE-VAN, JOHN

1940. Eastern Pacific expeditions of the New York Zoological Society. XVII. A review of the American fishes of the family Cerrhitidae. *Zoologica*, 25(5):53-64.

## TOSCANO, RICARDO

1940. Islas de la República Mexicana. *Boletín de la Sociedad Mexicana de Geografía y Estadística*, 54(5-6):245-385.

## TOWNSEND, CHARLES H.

- 1891a. Scientific results of exploration by the U. S. Fish Commission steamer *Albatross*. No. XIV. Birds from the coasts of western North America and adjacent islands, collected in 1888-89, with descriptions of new species. *Proceedings of the United States National Museum*, 13(799): 131-142.
- 1891b. Scientific results of exploration by the U. S. Fish Commission steamer *Albatross*. No. XV. Reptiles from Clarión and Socorro Islands and the Gulf of California, with description of a new species. *Ibid.*, 13(800): 143-144.
1901. Dredging and other records of the steamer *Albatross*, with bibliography relative to the work of the vessel. *Report of the Commissioner*, Part 26, United States Commission of Fish and Fisheries: 387-562.

## TREADWELL, AARON L.

1937. The Templeton Crocker Expedition. VIII. Polychaetous annelids from the west coast of Lower California, the Gulf of California, and Clarión Island. *Zoologica*, 22(9):139-160.

## UNITED STATES BOARD ON GEOGRAPHIC NAMES

1952. Decisions on names in Mexico. Cumulative decision list 5209, United States Department of the Interior, 11 pp.

## UNITED STATES COAST AND GEODETIC SURVEY

1883. Report of the U. S. Coast and Geodetic Survey showing the progress of the work during the fiscal year ending with June, 1881. Part 2, Brief abstracts of work accomplished, United States Coast and Geodetic Survey: 10-51.



UNITED STATES NAVY HYDROGRAPHIC OFFICE

1880. Revilla Gigedo Islands. *In* The west coast of Mexico from the boundary line between the United States and Mexico to Cape Corrientes, including the Gulf of California. Publication no. 56 revised: 195-198.
1949. Weather summary, Mexico, Publication no. 532, 220 pp.
1951. Revilla Gigedo Islands. *In* Sailing directions for the west coasts of Mexico and Central America. Publication no. 84, 9th ed.:21-25.
1952. Volcanic activity North Pacific. *Hydrographic Bulletin*, no. 32, August 9.

VAN CLEAVE, HARLEY J.

1940. The Acanthocephala collected by the Allan Hancock Pacific Expedition, 1934. *University of Southern California Publications, Allan Hancock Pacific Expeditions*, 2(15):501-527.

VAN DENBURGH, JOHN

1895. A review of the herpetology of Lower California, Part I. Reptiles. *Proceedings of the California Academy of Sciences*, 2nd ser., 5:77-162.
1905. The reptiles and amphibians of the Islands of the Pacific coast of North America from the Farallons to Cape San Lucas and the Revilla Gigedos. *Ibid.*, 3rd ser., 4(1):1-28.
1922. The reptiles of western North America. *Occasional Papers of the California Academy of Sciences*, 10:1-1028.
- and J. R. SLEVIN
1914. Reptiles and amphibians of the islands of the west coast of North America. *Proceedings of the California Academy of Sciences*, 4th ser., 4:129-152.

VAN DUZEE, E. P.

1933. The Templeton Crocker Expedition of the California Academy of Sciences, 1932. No. 4. Characters of twenty-four new species of Hemiptera from the Galápagos Islands and the coast islands of Central America. *Proceedings of the California Academy of Sciences*, 4th ser., 21(4):25-40.
1934. The Templeton Crocker Expedition of the California Academy of Sciences, 1932. No. 12. The Diurnal Lepidoptera of the expedition. *Ibid.*, 12(12):139-146.

VASEY, G., and J. N. ROSE

1891. Plants collected in 1889 at Socorro and Clarión Islands, Pacific Ocean. *Proceedings of the United States National Museum*, 13(801):145-149.

VIVÓ ESCOTO, JORGE A.

1949. Islas Revillagigedo. *In* Mares e islas Mexicanos del Pacífico, resultado de la expedición científico-militar de la Escuela Superior de Guerra, Mayo-Junio, 1948. Mexico, Published under the direction of General Brigadier de E. M. Rubén Calderón Aguilar, Director: 55-69.

WAGNER, HENRY R.

1937. The cartography of the northwest coast of America to the year 1800. 2 vols., Berkeley, University of California Press, 1:xiv, 270 pp.; 2:271-543.

## WALLACE, A. R.

1876. The geographic distribution of animals. Vol. 2, New York, Harper and Bros., 553 pp.

## WEBSTER, J. D., and R. T. ORR

1954. Miscellaneous notes on Mexican birds. *Wilson Bulletin*, 66:267-269.

## WHEELER, WILLIAM M.

1933. The Templeton Crocker Expedition of the California Academy of Sciences, 1932. No. 6. Formicidae of the Templeton Crocker Expedition. *Proceedings of the California Academy of Sciences*, 4th ser., 21(6):57-64.

## WILLIAMS, HOWEL

1952. Recent eruption on San Benedicto Island, Mexico. *Volcano Letter*. (Hawaii), 517: p. 7.

## WILSON, CHARLES B.

1937. Parasitic copepods taken during the third Hancock Expedition to the Galápagos Islands. *University of Southern California Publications, Allan Hancock Pacific Expeditions*, 2(4):23-31.
1950. Copepods gathered by the U. S. Fisheries steamer *Albatross* from 1887 to 1909, chiefly in the Pacific Ocean. *Bulletin of the United States National Museum*, 100(14, part 4):141-441.

## YARZA, LUZ ESPERANZA

1948. Los volcanes de México. Mexico, Sociedad Mexicana de Geografía y Estadística, xvi, 187 pp.

## ZIESENHENNE, FRED C.

1937. The Templeton Crocker Expedition. X. Echinoderms from the west coast of Lower California, the Gulf of California, and Clarión Island. *Zoologica*, 22(15):209-239.

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